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Running Head: SELF-CONSTRUAL AND WOMEN'S MATH PERFORMANCE

When Women Can't Do Math: The Interplay of Self-Construal, Group Identification, and Stereotypic Performance Standards

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Abstract

The present research examined the interplay of self-construal (independent vs. interdependent), gender group identification, and performance standards (positive vs. negative) on women's math performance. Female participants were given a subtle self-prime prior to completing a math test under conditions where either a positive or negative group-based performance standard was rendered accessible. We report an interactive effect of self-construal, gender identification, and performance standard such that a negative (compared to a positive) standard decreased performance under interdependent self-prime ("we") conditions, whereas the reverse pattern emerged under independent self-prime ("I") conditions. Importantly, we observed this interplay of performance standards and self-construal only in individuals who self-identify with their gender group whereas performance outcomes of low identifiers were not affected by the experimental manipulations.

Keywords: assimilation, contrast, group identification, math performance, performance standards, self-construal, stereotype threat

When Women Can't Do Math: The Interplay of Self-Construal, Group Identification, and Stereotypic Performance Standards

A prominent line of psychological research revealed that group-based performance standards can have a profound impact on those targeted by such standards. This research documented that test takers perform poorly under conditions where negative in-group standards are salient and applicable (for a review, see Steele, Spencer, and Aronson, 2002). Performance decrements under conditions where negative stereotypic in-group standards are salient and applicable are a consequence of what has been referred to as a *stereotype threat* experience. This experience has been defined as the fear that arises in situations where individuals are afraid of being judged or treated on the basis of a negative stereotype, or in settings where individuals run the risk of inadvertently confirming a negative stereotype related to their group (Steele, 1997).

The detrimental consequences of stereotype threat were first demonstrated in Steele and Aronson's (1995) seminal work. Their research showed that exposure to negative stereotypic expectancies (e.g., negative expectancies concerning the intellectual abilities of African Americans) undermined participants´ performance. The disruptive effects of negative stereotypic expectancies have been replicated in a substantial number of studies (Steele et al., 2002). In these studies, participants who were confronted with performance standards based on their group membership showed *assimilative* effects in the sense that their performance outcomes mirrored the valence of the respective stereotypic in-group standard – reaching a low performance level when confronted with a negative standard and reaching an improved outcome when that negative standard was removed or replaced with a positive standard. This pattern reflects an assimilation effect in the sense that individuals' performance level

correlated positively with the valence of the activated stereotypic performance standard.

In the present paper we apply an assimilation-contrast perspective in elaborating on stereotype threat effects. This interpretation of stereotype threat effects leads us to a crucial question that has been discussed in recent research analyzing the effects of standards and expectancies on social judgments (Biernat, 2005): what determines the *direction* (assimilation or contrast) of effects that standards and expectancies exert on social judgments? We focus on one factor that has received particular attention in the recent social comparison literature (Blanton, 2001) and emerged as a moderator of social comparison effects on self-evaluations as reported by Stapel and Koomen (2001a): *self-construal level*. Specifically, we test the assumption that assimilative effects of activating in-group performance standards (i.e., "classic" stereotype threat effects) are most likely when the interdependent level of the self ("we") is accessible whereas the effect of activating in-group performance standards are more likely to be contrastive (resulting in reversed stereotype threat effects) when the independent level of the self ("I") is accessible. Moreover, we test whether *identification with the relevant group* moderates the assimilation-contrast processes outlined above. This proposition is based on the notion that group-related information (e.g., group-based expectancies) is most likely to influence individuals who see membership in the respective group as an important aspect of their self-concept.

In essence, the theoretical assumptions underlying our work hold that when a negative group-based standard is salient in a test situation, individuals who are highly identified with the relevant group are particularly likely to show a disruptive effect of negative stereotypic expectancies following the activation of the interdependent level of the self (parallel to results observed by Marx and Stapel, 2006). That is, we

assume that making a negative expectancy salient should result in a strong performance decrement in highly identified female test takers working on a math test after their interdependent level of the self is activated.

In contrast, we propose that when a positive group-based standard is made salient in a test situation, individuals who are highly identified with the relevant group are particularly likely to show disrupted performance (i.e., a positive expectancy threat effect) when their independent level of the self was previously activated. Given that an independent self-construal is related to a tendency to see the self as different from others (differentiation mind-set), it is likely that highly identified women become concerned that they might not perform up to an activated high (positive) standard and as a result perform worse on the test. The theoretical rationale underlying these assumptions is outlined below.

Self-Construal as a Determinant of Assimilation and Contrast

Much of the research on judgmental processes has focused on boundary conditions that determine the *direction* of context effects and a number of constructs have been identified that influence the likelihood of assimilation and contrast effects (Biernat, 2005). Most important to the present research, Stapel and Koomen (2001a) successfully tested *self-construal level* as a moderator of social comparison effects. The theoretical rationale underlying their research can be summarized as: (1) The independent level of the self ("I") represents the aspects of the self-concept that differentiate the self from others whereas the interdependent level of the self ("we") represents aspects of the self-concept that reflect integration and inclusion of the self in the social world. This reflects an established proposition in research on self and identity (cf. Brewer & Gardner, 1996; Markus & Kitayama, 1991). (2) Self-construal level is associated with distinct styles of social information processing. When the

independent level of the self is activated individuals tend to *accentuate differences* from others and are in a differentiation mind-set (exclusion mechanisms predominate). In contrast, when the *interdependent level of the self* is activated individuals tend to *accentuate similarities* to others and are in an integration mind-set (inclusion mechanisms predominate).

Based on these propositions, Stapel and Koomen (2001a) proposed that social comparison is likely to yield contrast effects when the independent level of the self is activated whereas assimilation effects are more likely when the interdependent level of the self is activated. Supporting this notion, they found that priming the interdependent and independent level of the self resulted in assimilation and contrast effects on self-evaluation judgments. Similar results emerged in other research testing social comparison effects and the impact of self-priming (cf., Kemmelmeier & Oyserman, 2001; Kühnen & Hannover, 2000; Schubert & Häfner, 2003).

Self-Construal as a Moderator of Stereotype Threat Effects

The present research examines whether self-construal level serves as a boundary condition of assimilation and contrast effects on *test performance* (i.e., on a behavioral measure). That is, we test self-construal level as a moderator of the impact that negative and positive group-based performance standards exert on a behavioral measure like test performance. There is reason to assume that social comparisons and self-construal priming can have meaningful effects on *behavioral* processes, because previous studies revealed significant effects of these factors on behavioral measures such as test performance (Schubert & Häfner, 2003; Stapel & Suls, 2005) and behavioral mimicry (van Baaren et al., 2003). Hence, an extension of the theoretical ideas proposed by Stapel and Koomen (2001a) concerning the role of self-construal in social comparison effects to the domain of test performance is promising.

In line with social comparison theory and research, we propose that people tend to refer to *similar others* for relevant performance standards (Festinger, 1954; Goethals & Darley, 1977; Zanna, Goethals, & Hill, 1975). Accordingly, we assume that when membership in a certain social group is salient in test situations in-group standards represent the most relevant performance standard. Starting from this assumption, we propose that stereotype threat effects can be interpreted as the assimilation of performance outcomes to negative in-group performance standards. Moreover, we propose that the activated information concerning the typical in-group performance level is included in the formation of a mental representation of the self (unless specific additional context cues trigger exclusion mechanism, cf. Schwarz & Bless, 1992). As a consequence, assimilative effects on self-evaluations, performance expectations, and test performance should be observed. This assumption has been supported in several studies (cf. Cadinu et al. 2003; Sekaquaptewa & Thompson, 2003; Stangor, Carr, & Kiang, 1998; for an overview, see Steele et al., 2002).

The consistency of assimilative effects obtained in stereotype threat research is in agreement with one of the most influential models of assimilation and contrast effects – the inclusion/exclusion model (Schwarz & Bless, 1992). This model holds that assimilation is the "default" outcome in the sense that relevant context information (e.g., information concerning the typical in-group performance level) is *included* in the formation of a representation of the target (e.g., the formation of a self-evaluation) unless additional features of the task or situation suggest that context information should *not* be used[1]. Of note, *group identification* has been documented as a moderator determining the strength of such assimilative stereotype threat effects in previous research (Schmader, 2002), indicating that individuals who see

membership in the relevant group as an important aspect of their self-concept are more strongly affected by salient in-group performance standards.

Given the consistency of assimilative effects in previous stereotype threat research one may wonder whether these assimilative effects can be reversed into contrast effects. In this context, it seems promising to address the level of self-construal as a potential moderating factor since previous work suggests that contrast effects can be triggered under conditions where an independent self-construal is activated (Stapel & Koomen, 2001a). In fact, there is empirical evidence supporting the proposed interplay of self-construal and social comparison standards in performance settings. Specifically, Marx and Stapel (2006; see also Marx, Stapel, and Muller ,2005; Experiment 3) found *assimilation* of test performance to social comparison standards under conditions where the *interdependent* level of the self was activated. Note however, that in these studies a condition where the independent level of the self was activated was not included. Interestingly, Schubert and Häfner (2003) observed a behavioral *contrast* effect under conditions where the *independent* level of the self had been activated.

In line with this previous work, we assume that individuals' performance is *positively* correlated with the valence of relevant in-group performance standards (assimilation effect) when the *interdependent* level of the self ("we") is activated. Hence, we expect "classic" stereotype threat effects under conditions where the interdependent level of the self is accessible. However, when the *independent* level of the self ("I") is rendered accessible one may expect performance to be *negatively* correlated with the valence of relevant in-group performance standards (contrast effect). Thus, a reversal of the "classic" stereotype threat effect should be observed

under conditions where the independent level of the self is activated (i.e., higher performance when a negative rather than a positive in-group standard is accessible).

Group Identification as Crucial Moderating Factor

Based on the notion that self-related information receives preferential attention (Bargh, 1982; Bargh & Pratto, 1986; Geller & Shaver, 1976; Moray, 1959; Postman, Bruner, & McGinnies, 1948), we assume that group-based information is more likely to receive attention in participants who see the respective group as an important aspect of their self-concept. Because group-related information is more self-relevant in high identifiers, stronger effects of group-based expectancies should emerge in high (versus low) identifiers. Accordingly, it seems plausible to expect a pronounced interplay of self-construal and group-based expectancies in high identifiers whereas low identifiers are much less likely to show effects involving group-based expectancies.

The assumed strong sensitivity to group-based cues in high identifiers is in line with research documenting group identification as a moderator of individuals' sensitivity concerning group-related cues (e.g., stereotypes and prejudice). Much research has revealed that group identification determines sensitivity to group-based discrimination such that high (vs. low) group identifiers are more concerned with relative inter-group treatment (Petta & Walker, 1992) and more sensitive with regard to group-based injustice (Branscombe, Schmitt, & Harvey, 1999, Crosby, Pufall, Snyder, O'Connell, & Whalen, 1989) and prejudice (Eccleston & Major, 2006; Major et al., 2003; McCoy & Major, 2003; Operario & Fiske, 2001). Of particular relevance to the present work is research documenting that group-based *performance standards* are most likely to affect individuals who self-identify with the respective group. For example, Schmader (2002) observed that women with higher levels of gender

identification performed worse on a math test when gender differences in math were salient whereas women with lower levels of gender identification were not affected by the manipulation.

There is consistent evidence indicating that the level of group identification is a crucial factor that determines the degree to which individuals are sensitive regarding group-related cues. Thus, we assume that group-based standards are perceived as relevant by individuals who identify with the respective group whereas individuals with low identification levels are much less sensitive to such cues. Accordingly, we hypothesize that the proposed interplay of self-construal level and in-group performance standards can be observed in high group identifiers whereas low identifiers' performance is less likely to be affected. To test our reasoning, we conducted an experiment that involved assessment of gender group identification as well as the manipulation of self-construal level and the valence of (in-group) performance standards.

Note that an innovative aspect of the present work is that we systematically assess the interplay of three important factors that have not been tested in combination thus far. We focus on *group-based standards* that are likely to affect individuals in everyday contexts (such as high school classroom settings) rather than individual role models (Marx et al. 2005) or stereotypical cues (Schubert & Häfner, 2003). Moreover, we focus on a *direct comparison of* conditions where the *independent or interdependent level of the self* has been activated whereas previous research either focused on the independent (Schubert & Häfner, 2003) or the interdependent level of the self (Marx & Stapel, 2006). Finally, we assess the moderating role of *group identification* to investigate whether the impact of group-based standards is based on

"cold" cognitive mechanisms (automatic activation of behavioral scripts) or is likely to involve "hot" motivational mechanisms of self-regulation (see discussion below).

Method

Procedure

Participants. Female students (*N* = 114; *Mean* age = 18.26) from a large Midwestern University participated in the study and received course credit for participation. At the outset of the study, participants learned that the study consisted of several sections related to different research projects.

Self-construal priming. Participants first completed the Brewer and Gardner (1996) pronoun circling task to activate the independent or interdependent self. In the first part of the study, we asked participants to carefully read a short paragraph and to circle all the pronouns found within the paragraph. More specifically, participants read a paragraph (a story about a trip to the city) with instructions to circle all pronouns that appear in the text (e.g., "*we"* or "*us"* in interdependent conditions and "*I* " or "*me"* in independent conditions; cf. Gardner, Gabriel, & Lee, 1999).

Manipulation of group-based expectancy. Next, participants completed a questionnaire described as research conducted by other investigators interested in individual differences in math ability. Stereotypic (i.e., group-based) performance standards were manipulated using a fairness manipulation (cf., Spencer, Steele, & Quinn, 1999). In the introduction to the test, half of the participants read that the test had been shown to produce gender differences (since the domain of math ability is typically seen as a male domain describing a test as gender-biased reflects the induction of a *negative in-group standard* in female participants), whereas the remaining participants read that the test had been shown *not* to produce gender differences (a *positive in-group standard*).[2]

Math test. Participants had 5 minutes to work on a difficult *quantitative test* including 9 math problems adapted from the Third International Mathematics and Science Study (Martin & Kelly, 1996).

Group identification. Following the math test participants filled in a questionnaire[3] that included the gender version of the collective self-esteem scale (Luhtanen & Crocker, 1992). This scale was introduced by asking participants to consider their gender group membership when responding to a list of items referring to their gender group (e.g., "In general, belonging to this social group is an important part of my self-image.") Responses were assessed on scales ranging from (1) *do not agree at all* to (7) *strongly agree*. The scale was reliable (*alpha* = .85) and participants' responses to this scale were *not* affected by the experimental manipulations (all Fs < 1) and identity scores were not systematically related to performance scores (r = -.10, p = .29). Moreover, we ran additional regression analyses testing the interplay of test performance and self-construal prime under positive and negative standard conditions in predicting identity scores to test whether participants' scores on the group identification measure varied as a function of test performance and experimental conditions. No meaningful main or interaction effects emerged in these analyses (all t < 1.65, *n.s.*).

Results and Discussion

We first computed a median split on participants' scores on the gender version of the collective self esteem scale (*Median* = 5.7) and added this variable as a factor into the analysis. Accordingly, we ran a 2 (independent vs. interdependent self-construal) × 2 (negative vs. positive in-group standard) × 2 (low vs. high gender group identification) ANOVA on the number of items correct. This analysis resulted in a significant prime × performance standard interaction (F(1, 106) = 9.06, p < .005)

that was qualified by a three-way interaction involving gender group identification ($F(1, 106) = 6.09$, $p < .02$). As depicted in Table 1, the pattern of this interaction supports our hypotheses. An interaction pattern involving self-construal prime and in-group performance standard emerged in participants reporting a high level of identification with their gender group ($F(1, 54) = 15.8$, $p < .001$), whereas no effects of the experimental manipulations emerged in low identifiers (all Fs < 1). The pattern of the interaction in high identifiers reveals that a negative in-group standard resulted in a "classic" stereotype threat effect under interdependent self-prime conditions, $t(51) = 2.15$, $p < .04$, Cohen's $d = .94$. In contrast, under independent self-prime conditions performance was decreased following the activation of a positive in-group standard, $t(51) = -3.47$, $p < .002$, Cohen's $d = -1.18$. Thus, a significant reversal of the "classic" stereotype threat effect emerged in this case. Moreover, contrast analyses revealed that participants in the interdependent self-prime condition outperformed those primed with the independent self when the test had been described as gender-fair (positive standard), $t(51) = 2.26$, $p < .03$, Cohen's $d = .77$. In contrast, when the math test was described as gender-biased (negative standard) participants in the independent self-prime condition reached a higher performance than their interdependent self-prime counterparts, $t(51) = -3.40$, $p < .002$, Cohen's $d = 1.33$.

Additionally, we submitted the *number of items attempted* to the three-factorial ANOVA parallel to the analysis reported above. No significant effects emerged in this analysis. This suggests that the obtained effects on the number of items correct do not reflect a differential effort investment. If effort withdrawal was the process underlying the observed performance decrements, one would expect that the effects on the number of items attempted to parallel those on the number of items correct.

General Discussion

This research demonstrates that self-construal level and group identification are important factors that determine whether negative and positive in-group performance standards influence test performance in an assimilative or contrastive manner. In line with the proposition that highly group identified individuals are more sensitive regarding group-related context cues, we found that group-based performance standards did not affect performance of low identifiers whereas high identifiers showed strong reactions. Specifically, we found that in high group identifiers activating an interdependent self-construal resulted in assimilative effects of stereotypic expectancies whereas activating the independent self resulted in a contrast pattern. Our results indicated that the level of group identification as well as the type of self-construal activated in the testing situation are crucial factors that determine the nature of effects elicited by activating in-group performance standards on test performance.

We acknowledge that the lack of a no prime control condition limits the conclusions that can be drawn from the current findings to some extent. For example, we cannot tell whether an interdependent self-construal is a necessary precondition for "classic" stereotype threat effects to emerge or whether it merely exacerbates the effect. Also, it is unclear whether the activation of an independent self-construal triggers reactance effects (cf.; Kray, Thompson, & Galinsky, 2001) when a negative group-based standard is salient resulting in a performance level that is higher than the level one may observe under no prime control conditions. Further research is currently underway to address these topics.

Nonetheless, the reversal of the "classic" assimilative stereotype threat pattern that we observed in high identifiers under independent self-prime conditions seems

noteworthy as we are not aware of any research that documents such a contrast effect. That is, the reported data are the first documentation of a reversed stereotype threat effect applying an experimental stereotype threat manipulation that has been used in many previous studies reporting assimilative stereotype threat effects.

Underlying Mechanisms

The present research found evidence not only for crucial boundary conditions that determine the nature of effects elicited by stereotypic performance standards, but also evidence that may help to understand the *processes* that underlie the observed assimilative and contrastive effects. We argue that the moderation finding involving gender group identification supports a distinct "hot" interpretation of the underlying mechanisms, because neither a social identity interpretation nor a cognitive ideomotor interpretation seems to be well compatible with the pattern obtained in the present study. We outline the different perspectives below.

According to a "hot" interpretation of our findings, group identification in combination with self-construal priming determines the impact of positive or negative in-group standards because different kinds of performance-debilitating *worries* (and presumably "hot" self-regulatory and arousal-based mechanisms) are triggered depending on the inclusion or exclusion of the self in/from a relevant group. When an *inclusion* of the self in a group is related to negative performance (because the group is associated with poor performance), the worry of possibly confirming a negative group-based expectancy may trigger performance-debilitating concerns. And such concerns are particularly likely to emerge in individuals who perceive their group membership as particularly self-relevant. When *exclusion* of the self is salient, highly identified targets can worry that they won't perform up to the positive in-group standard. That is, the independent self-prime in combination with a positive standard

causes them to worry that they won't do as well as the other members of their group. Accordingly, when exclusion from the group is rendered salient it is most likely that a positive (i.e., high) in-group standard triggers concerns regarding a possible underperformance compared to in-group members. These concerns (about failure to reach a positive in-group standard) and the related performance pressure are likely to result in performance decrements. Again, it seems reasonable to expect that such concerns are more likely to emerge (and are more intense) in individuals with a *strong* group identification because group-based performance standards are particularly relevant to them. Thus, the moderating effect of group identification observed in the present study seems to support a "hot" interpretation of the obtained results.

Note that our findings seem incompatible with a social identity perspective. According to this perspective, one would argue that we-priming reflects the activation of social identity whereas I-priming emphasizes the relevance of one's individual identity. Hence, we-priming should render social identity concerns salient and thus it should increase the susceptibility to stereotype threat effects whereas I-priming reduces social identity concerns and should eliminate stereotype threat effects. In line with the social identity perspective, Ambady et al. (2004) found that individuation via disclosure of personal information eliminated (but did *not* reverse) detrimental effects of previously activated negative stereotypes on test performance outcomes. This suggests that situationally activating aspects related to one's individual identity can attenuate the harmful consequences of negative stereotypic expectancies. Note, however, that the individuation manipulation applied in this work is not equivalent to the self-construal priming used in the present study. Specifically, the individuation procedure is not particularly likely to trigger a differentiation mind-set. Moreover, the individuation manipulation was applied *after* the activation of the self-stereotype in

the experimental paradigm of Ambady et al. (2004), which is why a differential appraisal of group-based expectancies as a function of the activated aspects of the self are not likely to emerge. According to the social identity perspective, one would expect to find an additive effect of gender identification and we-priming such that the strongest stereotype threat effects emerge under we-prime conditions in high group identified participants. A somewhat weaker "classic" stereotype threat pattern should emerge in I-primed participants with a higher level of group identification as well as in we-primed participants with a weak identification. The pattern observed in our experiment is not in line with these predictions.

Another possible interpretation of the obtained interplay of self-construal and group-based performance standards is "cold" cognitive in nature and refers to cognitive inclusion-exclusion mechanisms following we- and I-priming, respectively. This perspective holds that the accessibility of behavioral representations (scripts) related to a mental representation of the self as either smart or dumb drives the effects (cf. Dijksterhuis, Spears, Postmes et al., 1998). According to this interpretation, I-priming leads to an exclusion of the self from a group which results in a mental representation of the self as (relatively) smart when the group has been related to negative performance whereas exclusion results in a mental representation of the self as (relatively) incompetent when the group has been related to positive performance. The reverse should be true in case of we-priming. Because we-priming triggers an integration mind-set resulting in a tendency to incorporate the self into a salient group, we-priming should result in a mental representation of the self as (relatively) smart when the group has been related to positive performance whereas inclusion results in a mental representation of the self as incompetent when the group has been related to negative performance. The behavioral representations related to a self-representation

as smart or incompetent should then influence performance outcomes on a subsequent test. Note that according to Bargh (1997) the level of identification with a stereotyped group should *not* play a significant role in the "perception-behavior expressway." Therefore, group identification should play *no* moderating role according to this ideomotor interpretation. In fact, there seems neither a good reason to assume that a differentiation or integration mind-set is more accessible in persons with a strong or weak gender identification, nor is it particularly plausible to assume that gender identification is systematically related to the accessibility of self-representations related to the concepts "incompetent" or "smart." Thus, an ideomotor account would probably not predict a moderating function of group identification in the present context.

However, one could probably argue that rendering group-based expectancies salient may have a stronger impact on highly identified individuals because they have more relevant knowledge available that can be activated (specifically, knowledge on particularly smart or particularly incompetent members of the in-group). If it was indeed the case that high group identifiers have more relevant knowledge available, the ideomotor approach could account for the pattern of findings observed in the present study.

We are skeptical regarding this possibility. From our perspective, it seems particularly questionable to assume that high identifiers have more knowledge on incompetent in-group members available than low identifiers. Furthermore, an exclusively "cold" cognitive account referring to automatic processes of knowledge activation seems not a particularly convincing explanation of the data pattern observed in our study. This is not to say that cognitive processes do not play a role in the obtained effects at all. In line with Wheeler and Petty (2001) we assume that hot

and cold processes *cooperate* in determining the impact of stereotypic performance standards on behavior. Accordingly, we suggest that the moderating role of group identification indicates that "hot" processes are most probably involved in the pathway leading to the assimilation and contrast effects that emerged in our studies while we do not suggest that this finding implies that cold cognitive processes are not involved at all.

We think that the moderating effect of group identification observed in the present study supports a "hot" interpretation of the obtained assimilation and contrast effects, since neither a social identity interpretation nor a "cold" ideomotor approach can convincingly account for the distinct pattern we observed reflecting a moderating function of group identification. In our view, the observed moderating role of group identification can be understood as a first hint that "hot" processes – that is mechanisms involving self-regulatory processes (i.e., distinct mechanisms associated with goal striving, such as defensive vigilance versus eager and tenacious goal striving; cf. Higgins, 1998) and bodily-experiential mechanisms (i.e., physiological arousal; cf. Ben-Zeev, Fein, & Inzlicht, 2005) – are most likely involved in the observed assimilation and contrast effects (although further research is clearly needed before definite conclusions can be drawn). From our perspective, these "hot" mechanisms need to be addressed in greater detail in a next generation of research in the attempt to come to a closer understanding of the underlying mechanism of stereotypic performance standards on performance outcomes.

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Footnotes

[1]The assumption regarding assimilation as the default process is not included in other models of assimilation and contrast (see Biernat, 2005).

[2]There are good reasons to assume that women - who are chronically confronted with negative expectations ("Women are bad at math") - perceive the information that *no differences* will be expected as a positive expectancy compared to the default negative expectancy. We acknowledge that inducing an explicitly positive expectancy (e.g., "Women typically outperform men on the present test.") would have been a stronger induction. However, such a procedure is not equivalent to previous stereotype threat research and would have restricted the comparability of our findings. Moreover, relying on a "weak" induction reflects a conservative test and thus commendable methodology.

[3]This questionnaire also contained questions assessing participants' affective state (e.g., agitated, dejected). None of these measures were significantly affected by the experimental manipulations (all F's < 1.4, $p > .24$).

Table 1

Test Performance as a Function of Gender Group Identification, Self-Construal Prime and Performance Standard

Group Identification	Self-Construal	Performance Standard	
		Negative	Positive
Low	Independent ("I")	4.3 (2.4)	3.6 (1.3)
	Interdependent ("we")	4.1 (1.7)	3.8 (1.7)
High	Independent ("I")	4.8 (1.4)	2.5 (2.2)
	Interdependent ("we")	2.7 (1.5)	4.1 (1.4)

Note. Standard deviations in parentheses.